



## Supporting Information

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Abalone-Inspired Adhesive and Photo-Responsive Microparticle Delivery Systems for Periodontal Drug Therapy

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## Supplementary Information

### **Abalone-inspired adhesive and photo-responsive microparticles delivery systems from microfluidic electrospray for periodontal drug therapy**

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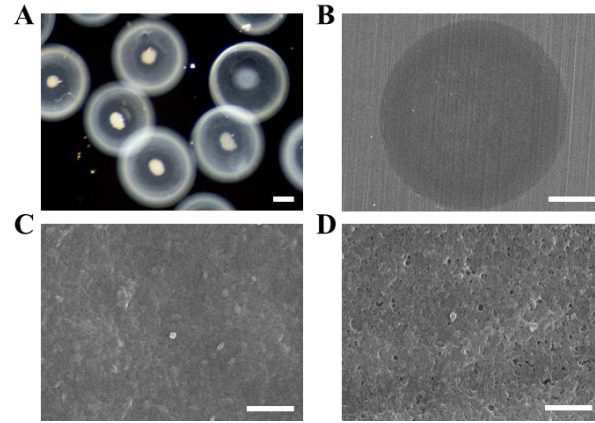
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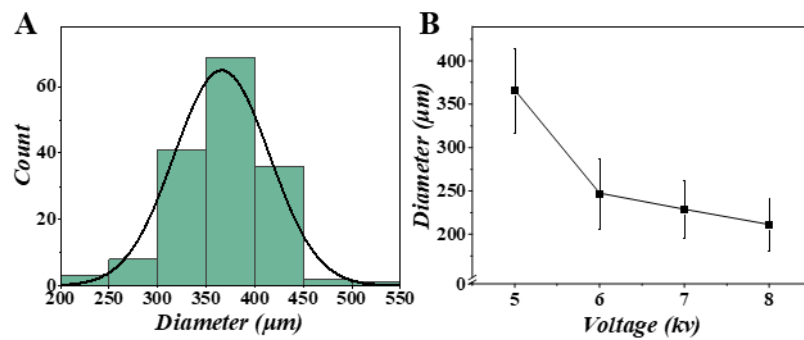
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**Supporting Figures:**

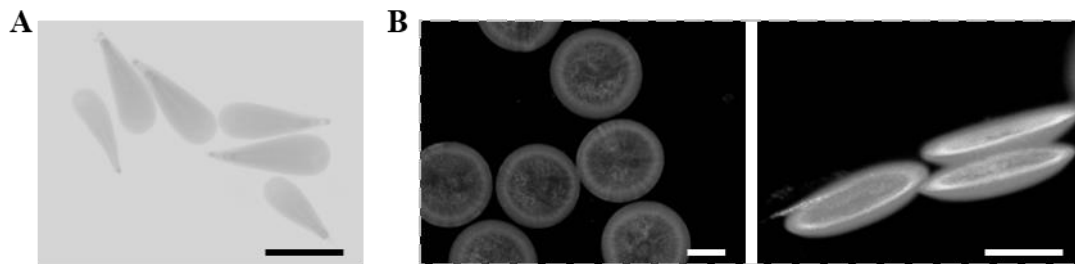


**Figure S1.** (A) Bright-field microscopic images of the jellyfish-shape MPs. (B-D) The SEM images of the MPs (B), the outer (C) and the inner surface (D) of the dual-composition MPs. Scale bars are 50  $\mu\text{m}$  in (A) and (B), 100 nm in (C) and (D).

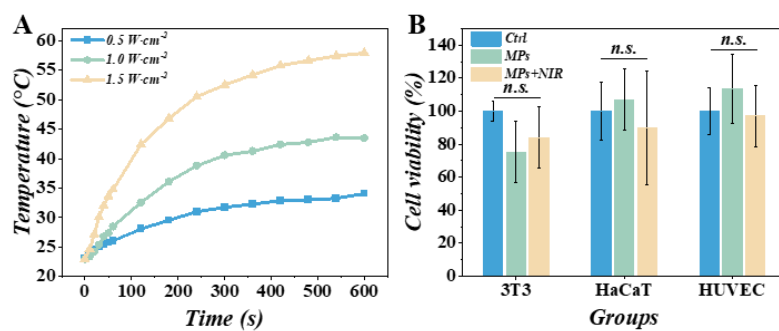


**Figure S2.** The analysis of microparticles' shape and size under different conditions.

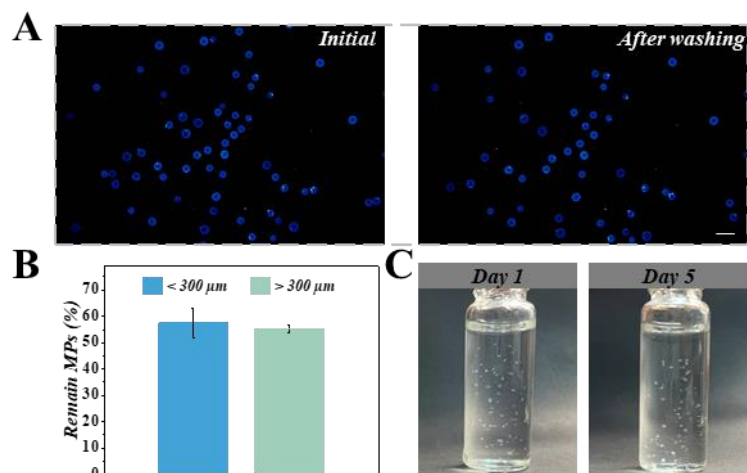
(A) The diameter of microparticles under 5 kv. (B) The statistical analysis of microparticles' size.



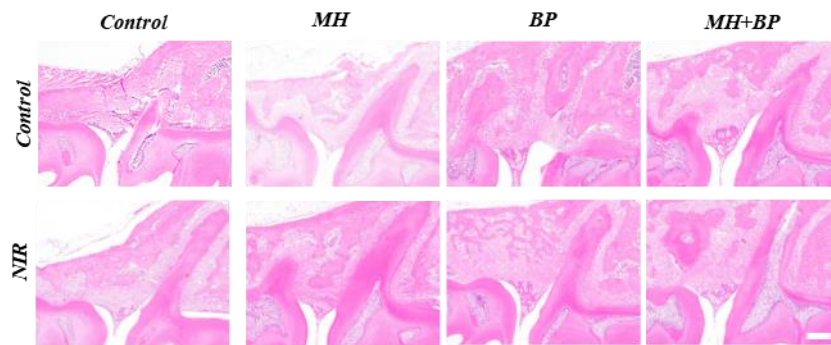
**Figure S3.** (A) The image of microparticles under short distance. Photographs of the particles in the tiled (B) and upright state (C). Scale bar is 100  $\mu\text{m}$ .



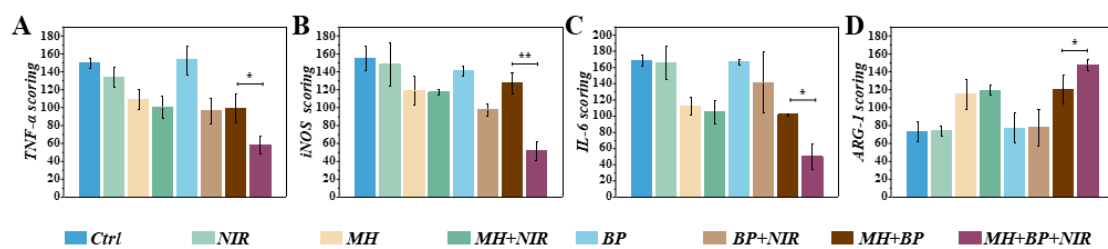
**Figure S4.** (A) The temperature change profile of bio-MPs under different power of NIR. (B) The quantitative analysis of Figure 3D.



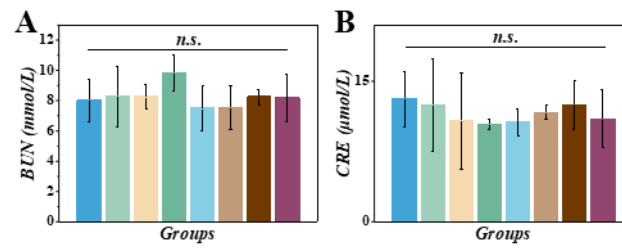
**Figure S5.** (A) The bio-inspired MPs before and after the water washing. (B) The quantification of MPs in (A), the remain percent was calculated through  $\text{Number}_{(\text{after washing})} / \text{Number}_{(\text{initial})} \times 100\%$ . (C) The photo of MPs storage for 5 days. The photos were taken after resuspend.



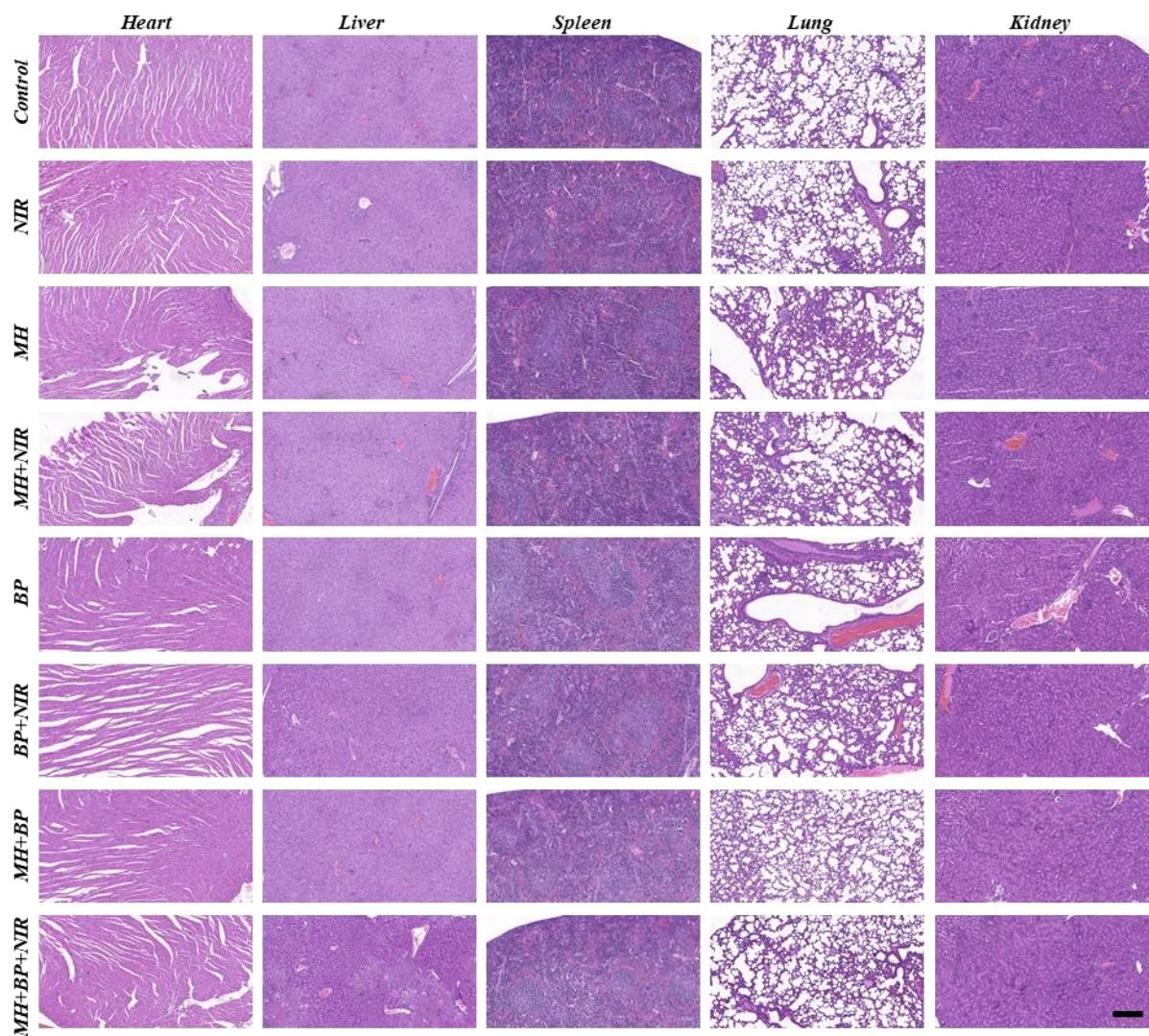
**Figure S6.** The H&E staining of the maxillary molar area after treatment. Scale bar = 200  $\mu\text{m}$ .



**Figure S7.** The quantitative analysis of IHC.



**Figure S8.** The renal function analysis of mice after treatments.



**Figure S9.** The hematoxylin & eosin (H&E) staining of collected organs embedded in paraffin. Scale bar: 100  $\mu\text{m}$ .